



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/074,179	02/12/2002	Qian Lin	10006288-1	5006
7590	08/25/2005		EXAMINER	
HEWLETT-PACKARD COMPANY			MOE, AUNG SOE	
Intellectual Property Administration			ART UNIT	PAPER NUMBER
P.O. Box 272400				
Fort Collins, CO 80527-2400			2685	

DATE MAILED: 08/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/074,179	LIN, QIAN	
	Examiner	Art Unit	
	Aung S. Moe	2685	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on _____.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 3-19,21-24,26 and 27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) 3-13,21-24 and 26 is/are allowed.
- 6) Claim(s) 14-19 and 27 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____.
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: _____.

DETAILED ACTION***Response to Arguments***

1. Applicant's arguments filed 6/9/2005 have been fully considered but they are not persuasive.

Regarding claims 14-19, the Applicant alleged that the combination of prior arts fails to show “the face quality of merit is computed by **computing brightness, noise level, contrast as well and absence or presence of red eye**”.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., **computing brightness, noise level, contrast as well and absence or presence of red eye**) are not recited in the rejected claim 14 (i.e., noted that claim 14 merely computes a face quality figure of merit for the captured image, and such broad limitations are clearly met by the combination of Ina '198 and Luo '339; i.e., see below). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

In this case, the combination of prior arts does in fact show the present claimed invention as required by claims 14-19. In particular, Ina '198 shows the quality of the digital image can be analyzed to determine a blurred image (i.e., see col. 7, lines 45+) so that the face quality of the captured image (i.e., the Face of the image as shown in Fig. 14) can be determined by the user (i.e., col. 7, lines 45+, and col. 8, lines 5+). However, it is noted that Ina '198 does not explicitly state a face quality computing by *comparing said computed face quality figure of merit to a threshold to determine if said face quality figure of merit exceeds said threshold* as claimed.

On the other hand, computing, in a camera, a face quality figure of merit for the captured image by comparing the computed face quality figure of merit to a threshold to determine if the face quality figure of merit exceeds the threshold is well known in the art as taught by Luo '339 (i.e., see Figs. 4 and 5; col. 2, lines 15+, col. 7, lines 15+, col. 8, lines 40+, col. 11, lines 5+).

In view of the above, having the system of Ina '198 and then given the well-established teaching of Luo '339, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Ina '198 as taught by Luo '339, since Luo '339 states at col. 4, lines 15+ that such a modification would enable enhancement and manipulation of images containing one or more human faces, so that, red-eye correction can be reliably performed.

Furthermore, it is noted that the combination of Ina '198, Luo '339 and Cheatle '861 also discloses that it is conventionally well known in the art at the time of the invention was made to compute "brightness, noise level, contrast and red eye" of the face quality of merit as required by claims 16, 17, 18 and 27. For example, the combination of Ina '198, Luo '339 and Cheatle '861 clearly shows the step of computing the means of L* (i.e., the Luminance signals of the image) to obtain a **brightness figure of merit** (i.e., see col. 8, lines 14+ of Lou '339 and page 5, paragraphs 0086+ of Cheatle '861); determining if the **brightness figure of merit** falls within a brightness threshold range (i.e., as shown in Figs. 7 and 8 of Lou '339, the brightness peak values is compared with a predefined threshold to ensure the brightness figure of merit; see col. 8, lines 10+, col. 10, lines 50+ and col. 11, lines 5+ of Luo '339) as required by claim 16.

In addition, the combination of Ina '198, Luo '339 and Cheatle '861 discloses the step of computing the local standard deviation of L* to obtain a **noise figure of merit** (i.e., noted the

noise figure of merit, such as “blurred image” and “red-eye image”, as discussed in the combination of Ina ‘198 and Lou ‘339; also see page 5, paragraph 0086 of Cheatile ‘861); and determining if **said noise figure of merit** (i.e., the peak value of the “red-eye image” as discussed in Figs. 7 and 8 of Lou ‘339) exceeds a noise threshold (i.e., see col. 8, lines 10+, col. 10, lines 50+ and col. 11, lines 5+ of Luo ‘339) as required by claim 17.

Moreover, the combination of Ina ‘198, Luo ‘339 and Cheatile ‘861 discloses the step of computing the overall standard deviation of L* (i.e., see page 5, paragraph 0086 of Cheatile ‘861) to obtain a **contrast figure of merit**; and determining if said contrast (i.e., Brightness/Peak of the image) figure of merit falls within a **contrast threshold range** (i.e., as shown in Figs. 7 and 8 of Lou ‘339, the brightness peak values is compared with a predefined threshold to ensure the brightness figure of merit; see col. 8, lines 10+, col. 10, lines 50+ and col. 11, lines 5+ of Luo ‘339) as required by claim 18.

Furthermore, it is cleared form the teaching of Luo ‘339 and Lin ‘354 that computing to check for a presence or an absence of red eye is conventionally well known in the arts (i.e., see Figs. 6-8 of Luo ‘339; and col. 3, lines 50+ of Lin ‘354), thus, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to compute a presence or an absence of red eye as taught by either Luo ‘339 or Lin ‘354, since Luo ‘339 states at col. 4, lines 15+ that such a modification would enable enhancement and manipulation of images containing one or more human faces, so that, red-eye correction can be reliably performed; and on the other hand, Lin ‘354 states at col. 2, lines 10+ that such a modification would automatically reduce redeye in an image with minimal user intervention.

Therefore, the Examiner continues to opinion that the combination of prior arts clearly established *prima facie* obviousness with regard to present claimed invention, and the claims 14-19 and 27 has been rejected as follows:

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ina et al. (U.S. 6,298,198) in view of Luo (U.S. 6,134,339).

Regarding claim 14, Ina '198 discloses a method for assessing the photo quality of a captured image in a digital camera (i.e., Fig. 2; col. 7, lines 45+), said method comprising: checking, in-camera, the photo quality of the captured image to determine if the photo quality is acceptable (i.e., as shown in Figs. 7, 11 and 14, the quality of the captured image is determined by the controller 100/92 located in the camera 10; see col. 7, lines 50+, col. 8, lines 25+, and col. 9, lines 5+); and

providing a corresponding photo quality feedback (i.e., noted that the feedback image is display on the LCD 40 of the camera so as the quality of the image can be determined by the user during the image capturing process; see Fig. 14) to a camera user wherein said checking step further comprises: computing (i.e., by the controller 100/92) a face quality (i.e., noted the face quality of the image 28 as shown in Fig. 14) of merit for the captured image (i.e., the face quality of the image 30, 128, 130 and 134 as shown in Fig. 14 is computed by the controller 100/92; see col. 7, lines 50+, col. 8, lines 25+, and col. 9, lines 5+)

Furthermore, it is noted that although Ina '198 suggested the quality of the digital image can be analyzed to determine a blurred image (i.e., see col. 7, lines 45+) so that the quality of the captured image (i.e., the Face of the image as shown in Fig. 14) may be determined by the user (i.e., col. 7, lines 45+, and col. 8, lines 5+), Ina '198 does not explicitly state a face quality computing by *comparing said computed face quality figure of merit to a threshold to determine if said face quality figure of merit exceeds said threshold* as claimed.

However, computing, in a camera, a face quality figure of merit for the captured image by comparing the computed face quality figure of merit to a threshold to determine if the face quality figure of merit exceeds the threshold is well known in the art as taught by Luo '339 (i.e., see Figs. 4 and 5; col. 2, lines 15+, col. 7, lines 15+, col. 8, lines 40+, col. 11, lines 5+).

In view of the above, having the system of Ina '198 and then given the well-established teaching of Luo '339, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Ina '198 as taught by Luo '339, since Luo '339 states at col. 4, lines 15+ that such a modification would enable enhancement and

manipulation of images containing one or more human faces, so that, red-eye correction can be reliably performed.

2. Claims 15-18 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ina '198 in view of Luo '339 as applied to claims as discussed above, and further in view of Cheatle (U.S. 2002/0191861).

Regarding claim 15, the combination of Ina '198 and Luo '339 discloses the step of detecting facial image data from the captured image (i.e., see the Examiner's comment with respect to claim 14 above). Further, the combination of Ina '198 and Luo '339 does not explicitly show the step of converting the detected image data from RGB color space into L*a*b* color space as claimed.

However, the above-mentioned claimed limitations are well known in the art as evidenced by Cheatle '861. In particular, Cheatle '861 teaches the step of converting the detected image data from RGB color space into L*a*b* color space as claimed (Fig. 1, page 5, the paragraphs 0086-0089).

In view of the above, having the system of Ina '198 and then given the well-established teaching of Cheatle '861, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Ina '198 as taught by Cheatle '861, since Cheatle '861 states at page 2, the paragraph 0011 that such a modification would provide a more convenient method for capturing and cropping electronic images thereof.

Regarding claim 16, the combination of Ina '198, Luo '339 and Cheatle '861 discloses the step of computing the means of L* (i.e., the Luminance signals of the image) to obtain a brightness figure of merit (i.e., see col. 8, lines 14+ of Lou '339 and page 5, paragraphs 0086+ of Cheatle '861); determining if the brightness figure of merit falls within a brightness threshold range (i.e., as shown in Figs. 7 and 8 of Lou '339, the brightness peak values is compared with a predefined threshold to ensure the brightness figure of merit; see col. 8, lines 10+, col. 10, lines 50+ and col. 11, lines 5+ of Luo '339).

Regarding claim 17, the combination of Ina '198, Luo '339 and Cheatle '861 discloses the step of computing the local standard deviation of L* to obtain a noise figure of merit (i.e., noted the noise figure of merit, such as “blurred image” and “red-eye image”, as discussed in the combination of Ina '198 and Lou '339; also see page 5, paragraph 0086 of Cheatle '861); and determining if said noise figure of merit (i.e., the peak value of the “red-eye image” as discussed in Figs. 7 and 8 of Lou '339) exceeds a noise threshold (i.e., see col. 8, lines 10+, col. 10, lines 50+ and col. 11, lines 5+ of Luo '339).

Regarding claim 18, the combination of Ina '198, Luo '339 and Cheatle '861 discloses the step of computing the overall standard deviation of L* (i.e., see page 5, paragraph 0086 of Cheatle '861) to obtain a contrast figure of merit; and determining if said contrast (i.e., Brightness/Peak of the image) figure of merit falls within a contrast threshold range (i.e., as shown in Figs. 7 and 8 of Lou '339, the brightness peak values is compared with a predefined threshold to ensure the brightness figure of merit; see col. 8, lines 10+, col. 10, lines 50+ and col. 11, lines 5+ of Luo '339).

Regarding claim 27, as discussed for claims 16, 17 and 18, the combination of Ina '198, Luo '339 and Cheatle '861 clearly show the well-known method for computing face quality of figure of merit by computing a brightness figure of merit (i.e., see claim 16 as discussed above), a noise level figure of merit (i.e., see claim 17 as discussed above), and a contrast figure of merit (i.e., see claim 18 as discussed above) and a checking for a presence or an absence of red eye (i.e., noted from the teaching of Luo '339 that the red eye effect is detect respectively to improved the image quality; see Figs. 6-8 and col. 7, lines 15+ of Luo '339). In view of this, computing brightness, noise, contrast and red eye is considered well known in the art as evidenced by the combined teaching of Ina '198, Luo '339 and Cheatle '861, thus, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to includes such features to improve the quality of image captured by the digital camera of Ina '198.

3. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ina '198 in view of Luo '339 as applied to claims as discussed above, and further in view of Lin et al. (U.S. 6,016,354).

Regarding claim 19, although the combination of Ina '198 and Luo '339 shows the step of detecting facial image data from the captured image (i.e., see col. 7, lines 45+ and col. 8, lines 5+ of Ina '198), the combination of Ina '198 and Luo '339 does not explicitly show the steps of converting the detected facial image data into a binary mask of only white and black pixels,

wherein the white pixels represent pixels of red color and the black pixels represent pixels of colors other than red; and checking the binary mask for presence of white pixels as claimed.

However, the above-mentioned claimed limitations are well known in the art as evidenced by Lin '354. In particular, Lin '354 teaches the steps of converting the detected facial image data into a binary mask of only white and black pixels, wherein the white pixels represent pixels of red color and the black pixels represent pixels of colors other than red; and checking the binary mask for presence of white pixels (col. 3, lines 15+, col. 5, lines 5+ and col. 6, lines 1+) as claimed.

In view of the above, having the system of Ina '198 and then given the well-established teaching of Lin '354, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Ina '198 as taught by Lin '354, since Lin '354 states at col. 2, lines 10+ that such a modification would automatically reduce redeye in an image with minimal user intervention.

Allowable Subject Matter

4. Claims 3-13, 21-24 and 26 are allowable over the prior art of record.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

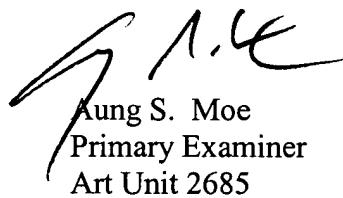
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aung S. Moe whose telephone number is 571-272-7314. The examiner can normally be reached on Flex.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward F. Urban can be reached on 571-272-7899. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2685

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Aung S. Moe
Primary Examiner
Art Unit 2685

ASM
August 22, 2005